DOCUMENT RESUME

ED 372 429 CS 508 624

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TITLE Emotional Response and Learning: Explaining Affinity Seeking Behaviors in the Classroom.
PUB DATE 13 Jul 94
NOTE 34p.; Paper presented at the Annual Meeting of the International Communication Association (44th, Sydney, New South Wales, Australia, July 11-15, 1994).
PUB TYPE Speeches/Conference Papers (150) -- Reports - Research/Technical (143)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Communication Research; *Emotional Response; Higher Education; *Student Attitudes; Student Reaction; *Teacher Behavior; Undergraduate Students
IDENTIFIERS Affinity Seeking Strategies; *Communication Behavior

ABSTRACT

A study measured students' emotional response to teacher behaviors based upon the theory of implicit communication. Subjects, 281 undergraduate student volunteers of preexisting, intact introductory communication courses at a southwestern university, completed questionnaires. As in previous research, teacher use of affinity-seeking behaviors correlated positively with student liking of the teacher as well as cognitive and affective learning. Findings indicated that student emotional response explains why learning occurs. Specifically, the dimensions of pleasure and arousal accounted for 61% of the variance of affective learning and 27% of cognitive learning. Further, students' emotional responses help explain why teacher affinity-seeking behaviors enhance learning. Findings are consistent with previous research using student emotional response to explain the meaning of teacher behavior from a student's perspective. Results suggest that the integration of theory implicit communication with learning in general and specific instructional variables such as affinity-seeking behaviors is appropriate and fruitful. (Contains 61 references and 5 tables of data.) (RS)

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Emotional Response and Learning: Explaining Affinity Seeking Behaviors in the Classroom

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Emotional Response and Learning:
Explaining Affinity-Seeking Behaviors in the Classroom

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Previous research suggests that there is a relationship between teachers who use affinity-seeking behaviors and student learning. Yet there has been limited speculation attempting to explain why these behaviors are related to enhanced cognitive and affective learning. This study measured students' emotional response to teacher behaviors based upon the theory of implicit communication. As in previous research, teacher use of affinity-seeking behaviors correlated positively with student liking of the teacher as well as cognitive and affective learning. Findings indicate that student emotional response explains why learning occurs. Specifically, the dimensions of pleasure and arousal accounted for 61% of the variance of affective learning and 27% of cognitive learning. Further, students' emotional responses help explain why teacher affinity-seeking behaviors enhance learning. These findings are consistent with previous research using student emotional response to explain the meaning of teacher behavior from a student's perspective. Results suggest that the integration the theory of implicit communication with learning in general and specific instructional variables such as affinity-seeking behaviors is appropriate and fruitful.

Emotional Response and Learning:
Explaining Affinity-Seeking Behaviors in the Classroom

Being liked by others is important to most people (Carnegie, 1937). Researchers have attempted to identify systematically the strategies that people use which lead to increased liking or affinity (Bell & Daly, 1984; McCroskey & Wheeless, 1976). Affinity-seeking behavior is defined as "the active social-communicative process by which individuals attempt to get others to like and to feel positive toward them" (Bell & Daly, 1984).

McCroskey and Wheeless (1976) identified the following seven strategies that they believed would enhance interpersonal affinity: (1) controlling physical appearance, (2) increasing positive self-disclosure, (3) stressing areas of positive similarity, (4) providing positive reinforcement, (5) expressing cooperation, (6) complying with other's wishes and (7) fulfilling other's needs. Bell and Daly (1984) added to the development of affinity-seeking strategies by identifying a typology of 25 affinity-seeking behaviors that enhance interpersonal affinity. Affinity-seeking strategies have been used to better understand how interpersonal relationships develop, especially during the early stages of relationship development (McCroskey, Richmond & Stewart, 1986).

Building upon the conceptualization of the affinity-seeking process in interpersonal contexts, several researchers have investigated how the degree of affinity between teachers and students relates to enhanced student outcome variables (Frymier, 1992; Frymier & Thompson, 1992; Gorham & Burroughs, 1989; Gorham, Kelly & McCroskey, 1989; McCroskey & McCroskey, 1986; Richmond, 1990; Roach, 1991; Richmond, Gorham & Furio, 1987). Despite the richness of programmatic research, few efforts have been made to explain how teacher affinity-seeking behaviors function to enhance learning. The purpose of this study is to assess whether there is a relationship between student emotional response and the increased learning that results from a

An earlier version of this paper was presented at the Speech Communication Association conference in Miami, Florida, November, 1993. The current paper includes an expanded discussion of emotional response theory and interprets the data in light of the emotional response paradigm.

teacher's use of affinity-seeking behaviors. A brief overview of affinity-seeking research in instructional settings is provided followed by a discussion of the relationship between student emotional response and the teaching and learning process.

AFFINITY-SEEKING AND LEARNING

Teachers who evoke more positive feelings from students will enhance the learning climate. Oester (1955) hypothesized that students who like their teacher will be likely to approach the subject matter more positively. Byrne (1971) linked student and teacher liking for one another with an enhanced climate for learning. Argyle (1983) suggests that students will be more motivated to learn if students have a positive relationship with their teacher.

Gorham and Burroughs (1989) suspect that teachers consciously use affinity-seeking strategies to engender increased affinity for both the teacher and the subject matter. McCroskey and McCroskey (1986), using the Bell and Daly (1984) typology, found that the most common affinity-seeking strategies used by teachers are Physical Attractiveness, Sensitivity, Elicit Other's Disclosure, Trustworthiness, Nonverbal Immediacy, Conversational Rule-Keeping, Dynamism, and Listening.

Recent research permits several generalizations about affinity-seeking strategies as contributing to enhanced learning: Teacher use of affinity-seeking strategies is moderately correlated with student motivation (Richmond, 1990; Frymier & Thompson, 1992), cognitive and affective learning (Richmond, 1990; Roach 1991).

Replicating previous research will strengthen claims that teacher affinity-seeking behaviors enhances cognitive and affective learning. Confirming that teacher affinity-seeking behaviors enhance learning would also provide a context for explaining why learning may occur. The following hypothesis is offered:

H1: *Teacher use of affinity-seeking strategies will be significantly related to student reported cognitive and affective learning.*

Frymier (1992) linked selected teacher affinity-seeking strategies (e.g. Assume Equality, Conversational Rule-Keeping, Elicit Other's Disclosure, Facilitate Enjoyment and Optimism) with enhanced student liking toward the teacher. Her documentation of these relationships confirms the conventional wisdom and previous research (Byrne, 1971) that teachers employing teaching strategies which communicate affinity results in reciprocal student liking. Knowing that teacher behavior has an effect upon student attitudes toward the teacher can assist theorists in understanding why affinity-seeking behaviors enhance learning. In an effort to replicate Frymier's findings and further confirm relationships between teacher use of affinity-seeking behaviors and student liking, the second research hypothesis is offered:

H2: *Teachers' affinity-seeking strategies will be significantly related to student reported liking of the instructor.*

Clear relationships have been found between teacher use of affinity-seeking behaviors and student learning. Affinity-seeking behaviors also apparently foster a positive reciprocal relationship between teacher and student. The primary reason advanced to explain why selected affinity-seeking strategies are effective in enhancing learning and the learning climate is that affinity-seeking strategies enhance student motivation (Argyle, 1983; Frymier & Thompson, 1992; Richmond, 1990). Teacher use of affinity-seeking behaviors may lead to increased liking which, in turn, may motivate students to learn. Student motivation may offer a general explanation in linking affinity-seeking behaviors and learning. It is possible, however, that another paradigm may more precisely explain how affinity-seeking strategies function. Student motivation has

been measured by asking students their "feelings about studying the content in the class" through the use of seven-step bipolar scales (Richmond, 1990, p. 183). The scales employed to measure motivation may, in fact, be accessing student emotional response upon which motivation to learn is predicated.

Gorham and Kelly (1988), in offering an explanation for the effects of immediacy behaviors on cognitive learning, suggests that teacher immediacy triggers student feelings of arousal. Student arousal may also explain the effects of teacher affinity seeking strategies upon student learning. We have over two decades of research which investigates the effects of specific teacher behaviors such as affinity seeking, immediacy and Behavioral Alteration Techniques on learning, yet relatively few theoretical explanations of why students respond to selected teacher behaviors have been offered or tested.

This study contends that student feelings of arousal and motivation may be more precisely measured and explained by assessing student's emotional response to specific teacher behaviors such as affinity-seeking strategies. Directly measuring student emotional responses to teachers may provide a more fruitful approach to help explain why certain teacher behaviors enhances student learning. Recent research by Butland and Beebe (1992a, 1992b) suggests that emotional response may indeed explain why certain implicit messages such as teacher immediacy and Behavioral Alteration Techniques affect student learning. Their research has documented relationships between specific teacher behaviors, student emotional response and learning.

EMOTIONAL RESPONSE

Emotional response has provided explanations for human behavior in several communication contexts. Evidence suggests emotional response helps explain communication apprehension (Biggers & Masterson, 1983, 1984), television viewing

patterns (Christ & Medoff, 1984; Christ & Biggers, 1984; Beebe & Biggers, 1986), conceptualizations of dissonance (Biggers, 1985), the effects of environment upon behavior (Biggers & Rankis, 1983; Russell & Mehrabian, 1974a) attitude change (Biggers & Pryor, 1982), empathic competence (Vinson, 1988), speaker delivery (Beebe & Biggers, 1988) and compliance-gaining strategies (Vinson & Biggers, 1993).

Mehrabian (1981) argues that implicit communication, which he defines as "aspects of speech [that] are not dictated by correct grammar but are rather expressions of feelings and attitudes above and beyond the contexts conveyed by speech" (p. 2), plays the predominant role in affecting emotional response to messages. Implicit communication includes such aspects of communication as head nods, use of personal space, facial expression, and body posture as well as paralinguistic features such as tone, rate, pitch, and volume. These behaviors communicate implicit messages because they are often unintentional or implied expressions of underlying emotions (Mehrabian, 1981). Teacher affinity-seeking behaviors could be described as efforts to implicitly communicate liking.

Whether or not emotions are expressed explicitly through words and overt behaviors, they often manifest themselves in the form of implicit messages to which others consciously or subconsciously respond. Emotions manifest themselves in a positive or negative attitude toward the subject. Approaching or avoiding behaviors are based on these attitudes. Put most simply, one pursues things that one likes; one likes things that one feels positive emotions for (e.g., teachers who use affinity-seeking strategies); one's emotions are affected by the implicit messages one receives.

The implicit-explicit dichotomy is analogous to the often references content and relationship dimensions of messages (Watzlawick, Beavin & Jackson, 1967). The implicit-explicit taxonomy has also been used to classify communication rule development and use (Shiminoff, 1980). According to Buck (1984) and Biggers (1990),

emotional states are the referents for implicit messages; objects and behaviors as symbolized through language are the referents for explicit communication systems.

An individual's emotional response is based, in part, upon the way he or she perceives implicit "information about feelings and like-dislike or attitudes" from others (Mehrabian, 1981, p. 3). Separate and collaborative research and theory development by Russell (1974a, 1974b, 1978) and Mehrabian (1974a, 1976, 1978, 1980, 1981) has resulted in a three-factor model of human emotional response. Instruments for measuring emotions along the three-factor structure have demonstrated validity and reliability in a variety of situations (Beebe & Biggers, 1986; Biggers & Masterson, 1984, 1984; Biggers & Pryor, 1982; Biggers & Rankis, 1983; Biggers & Walker, 1984; Christ & Biggers, 1984; Vinson, 1988; Vinson & Biggers, 1993).

Theory and research suggests that all emotional states may be adequately described in terms of three independent dimensions: (1) pleasure-displeasure, (2) arousal-non arousal, and (3) dominance-submissiveness. Each dimension is of a continuous nature and has within its range positive and negative values as well as a neutral point. Combinations of various values on each dimension characterize different emotions.

Pleasure. The pleasure-displeasure dimension is defined by adjective pairs like happy-unhappy, pleased-annoyed, or satisfied-unsatisfied. Psychological indication of this dimension is the presence or absence of a longing to approach the subject or object; generally, stimuli that produce greater pleasure elicit greater liking (Mehrabian, 1981).

Arousal. The arousal-non arousal dimension is defined by adjective pairs like stimulated-relaxed, excited-calm, or frenzied-sluggish. Psychological indication of this dimension is mental alertness (Mehrabian, 1981). Behavioral indications for this dimension are physical activity levels (Mehrabian, 1980). The arousal dimension modifies emotional reactions to stimuli by exaggerating the reaction of liking or disliking.

Dominance. The dominance-submissiveness dimension is defined by adjective pairs like controlling-controlled, influential-influenced, or in control-cared for (Mehrabian, 1981). Psychological indications of this dimension are feelings of power and control (Mehrabian, 1981). Behavioral indications for this dimension are found in a relaxed posture, body lean, reclining angle while seated, or asymmetrical position of the limbs (Mehrabian, 1980). Generally, stimuli that produce greater dominance result in feelings of greater empowerment or permission to behave. Alternately, emotions of submissiveness result in decreased license to acknowledge liking or disliking (Mehrabian, 1981).

The identification of a three-factor schema to interpret the meaning of messages is not novel. Osgood, Suci's and Tannenbaum (1957) three-factor structure of interpreting explicit messages preceded Mehrabian's (1981) factor structure for interpreting implicit messages. Berlo, Lemert and Mertz (1969) used a three-factor structure for measuring the effects of a speaker's behavior upon the speaker's perceived credibility.

Biggers (1990) and Vinson and Biggers (1993) supported by the work of Mehrabian and Russell (1974a) suggest that the three dimensions (pleasure, arousal and dominance) combine to permit predictions of a higher order construct called liking. The greater the degree of liking felt by a subject the greater the likelihood of approach behaviors. Human emotional response can thus permit predictions of approach or avoidance. As explicated by Biggers (1990) the following relationships can be predicted:

1. Increased emotional responses of pleasure, arousal and dominance increases liking.
2. Arousal acts to amplify pleasure; increased arousal increases the liking of pleasurable stimuli and increases the disliking of displeasurable stimuli.
3. Dominance acts as permission to behave so that increased dominance increases liking of pleasurable stimuli and increases disliking of displeasurable stimuli.

The overall implications of the effect of emotional response upon behavior are that increased liking will result in greater approach behavior, increased disliking will

result in greater avoidance. This three-factor emotional response schema has been successfully applied to the public speaking context. Beebe and Biggers (1988) explained the effects of speech delivery variations of perceived source credibility and receiver comprehension; they documented relationships between listener emotional response and credibility and comprehension. In the context of a classroom, approach behavior could be operationalized as increased learning. Thus relationships could be tested between student emotional responses to teacher behavior and student learning.

There is some evidence that student learning can be explained by student emotional responses to teacher behavior. Butland and Beebe (1992a) measured student emotional response to teacher immediacy behaviors and found positive relationships between teacher use of immediacy cues and student perceptions of affective and cognitive learning. In a subsequent study, Butland and Beebe (1992b) found that teacher use of Behavior Alteration Techniques can also be explained in terms of student emotional response to teacher behavior. These relationships may occur because teachers use implicit rather than explicit message to communicate relational messages of power, immediacy and affinity. The third hypothesis in this study addresses the presumed relationship among student emotional responses and learning.

H3: *Students' emotional responses of pleasure, arousal and dominance will be significantly and positively related to student reports of cognitive and affective learning*.

Beebe and Biggers (1992) argue that the effects of teacher variables on learning may be explained using the approach metaphor central to implicit communication theory. Gorham (1988) suggests that teacher immediacy can be understood within the larger framework of Mehrabian's (1981) theoretical assumptions. A primary goal of the this study is to test whether students' emotional response can help explain why teacher affinity-seeking behaviors enhance or detract from student cognitive and affective learning.

Conceptually, teacher affinity-seeking behaviors may increase learning by effecting students' liking for the instructor and/or course (Andersen, 1978, 1979; Oester, 1955; Frymier, 1992). Liking is an attitude that can be operationalize in terms of a combination of Mehrabian's three dimensions of emotion. Increases in pleasure, arousal and dominance levels correlate with this increased liking (Mehrabian, 1981). Thus, teacher affinity-seeking strategies may function by eliciting emotional responses either conducive or detrimental to liking, and learning by extension.

Richmond (1990) suggests that student motivation is the underlying construct that explains why affinity-seeking strategies enhance learning. Her operational definition of motivation, student's "feelings" about studying the class content, may really be another way of assessing student emotional response. Student motivation to learn may be significantly influenced by student emotional response to the teacher, subject matter and teaching strategies. Measuring student emotional states may be a more direct way to assess student responses to learning. Emotional response as conceptualized by implicit communication theory can then be used to explain why students are motivated to learn.

Accordingly, then, teacher use of affinity-seeking strategies would involve a three-part process: First, teachers' emotions are communicated implicitly through the use of affinity-seeking behaviors and are observed by students. Second, students feel increased or decreased pleasure, arousal and dominance characteristic of increased or decreased liking. Third, liking manifests itself in approach behavior (e.g., learning and being motivated to learn) in the classroom. Given these assumptions, the following hypothesis is forwarded:

H4: *Students' emotional responses of pleasure, arousal and dominance will account for more variance in student reports of cognitive and affective learning than will affinity-seeking strategies.*

METHOD

SUBJECTS

Participants consisted of 293 undergraduate student volunteers of preexisting, intact introductory communication courses at a southwestern university.

INSTRUMENT

Booklets were distributed to subjects in week 14 of a 15 week semester and were completed in approximately 15 minutes. Subjects were asked to consider the class they had most recently come from when answering the questionnaires. This method has been used effectively by others (Gorham, 1988; Plax et al., 1986; Richmond, 1990). 281 booklets were completed in their entirety. and addressed the following variables: affinity seeking, liking, emotional response and student learning. Each variable was operationalized as follows:

Affinity-Seeking

Affinity seeking was operationalized as 25 specific affinity-seeking behaviors that students observed in their teachers as developed by McCroskey and McCroskey (1986) and used by others to assess teacher affinity-seeking behaviors (Frymier 1992; Richmond, 1990). On a likert-type five-point scale, subjects were asked to estimate the frequency with which their instructors employed each behavior.

Liking

Liking was measured by a ten-item five-step bipolar adjective scale developed by Frymier (1992) and adapted for the present study. The scale has demonstrated unidimensional single-factor loadings and may be conceptualized as a unidimensional scale (Frymier 1992). This scale has previously demonstrated a reliability of .92 and an obtained range of 10-62 (Frymier, 1992).

Emotional Response

Emotional response was operationalized as students' emotional state measured by 16 five-point bipolar adjective scales developed by Mehrabian and Russell (1974) and adapted for the classroom context by Butland and Beebe (1992a, 1992b). These scales were employed to gauge subject emotional state across three dimensions (pleasure, arousal and dominance). For each scale, students were asked to respond to the following statement: "In this class, I usually feel _____."

Scale items selected to measure pleasure were: happy-unhappy, pleased-annoyed, satisfied-unsatisfied, contented-melancholic, hopeful-disparing and relaxed-bored. Scale items for arousal were: stimulated-relaxed, excited-sluggish, frenzied-calm, jittery-dull, wide awake-sleepy and aroused-unaroused. Feelings of dominance were measured by these scales: controlling-controlled, influential-influenced, in control-cared for, important-awed, dominant-submissive and autonomous-guided. Pleasure and arousal scales demonstrated adequate reliabilities (.80 and .85 respectively). Reliability for the dominance dimension was low but acceptable (.65).

Learning

Learning was operationalized in three ways: cognitive learning, learning-loss, and affective learning (Gorham, 1988; Plax et al., 1986). Cognitive learning was measured by a five-point likert-type response to the question: "How much do you think you learned in this class?" Learning loss was measured by a five-point likert-type response to the question: "How much do you think you could have learned in this class if you had the ideal instructor?" Affective learning was divided into three sub-categories: overall attitude, overall behavioral intent, and total affect as in prior research (Andersen, 1978; Gorham, 1988), and was measured via 5-point likert-type scales.

Other Measures

Booklets also controlled for presumed extraneous variables. Student and instructor ethnicity, student and instructor gender, and class size and type were identified to control for their potential effects.

Data Analysis

To test each hypothesis, multiple regressions were conducted and decomposed. To further clarify significant relationships among affinity-seeking behaviors, student emotional response, and student learning (Hypothesis 4) simple Pearson Correlations were calculated. This methodology was employed to more exactly replicate prior studies (Frymier, 1992; Gorham, 1988; Richmond, 1990) in an attempt to extend this program of research.

Criteria for Significance

As in previous research, the chance for type-one error was offset by setting criteria for significance at a level of .01 for all correlations and .05 for all regression models. Only correlations and regressions achieving these levels were considered significant.

RESULTS AND DISCUSSION

RELIABILITY OF MEASURES

To create a uniform questionnaire, all scales were adapted to employ a five-point likert-type scale. As a precaution, all adapted scales were tested to ensure that adequate reliability had not been sacrificed. Findings support this adaptation to a consistent five-point likert-type scale (attitude .93; behavioral intent .94; total affect .96).

Reliability for pleasure (.80) and arousal (.85) dimensions was deemed acceptable and consistent with previous research (Butland & Beebe, 1992a; Beebe & Butland, 1993). However, the reliability for the dominance dimension was low. This, too, was consistent

with previous research conducted in an educational context (Butland & Beebe, 1992a, 1992b). Students may have difficulty reporting their feelings with such words as "influenced" or "important." Yet, concluding that the dominance dimension exists in the classroom is anchored in both theory and research. The tripartite of pleasure, arousal and dominance has been found to transcend specific contexts theoretically and operationally (Mehrabian & Russell, 1974a). Further, strong evidence of the dominance dimension has emerged in classroom power and humor research (Civikly 1989; Gorham & Christophel, 1990; Richmond, 1990).

Research by Russell (1978, 1980), however, suggests that pleasure and arousal are stronger factors than dominance. Rather than measuring emotions, the dominance dimension may actually measure "beliefs about the antecedents or consequences of the emotions" (Russell, 1980, p. 1152). Dominance may be more important in measuring such emotional states as anger and anxiety. If these emotions were not experienced by the subjects' in their classrooms, the reliability of the dominance measures would be affected. Clearly, additional research is needed to help explain the lower reliability of the dominance measures in the classroom research context.

EXTRANEOUS VARIABLES

Multiple regression for total affect did produce significant results for both student ethnicity ($F=9.50$, $P=.01$, $R^2=.03$) and class size ($F=5.68$, $P=.02$, $R^2=.02$). Together, although significant, subject ethnicity and class size account for less than four percent of the variance in affective learning. These findings are consistent with prior research (Powell & Hargrove, 1989; Sanders & Wiseman, 1989). All other variables yielded non significant results.

HYPOTHESIS ONE: AFFINITY-SEEKING BEHAVIORS

Hypothesis one predicted that teachers' use of affinity-seeking strategies will be related to student cognitive and affective learning. This hypothesis was supported for all three criterion variables, as shown in Table 1.

Results suggests that students report increased cognitive and affective learning from teachers who display affinity-seeking behaviors. These results do not document a direct cause and effect relationship between teacher affinity-seeking behaviors and learning. Richmond (1990) suspects that teacher behaviors lead to increased motivation on the part of the student which, in turn, leads to increased learning. Increased motivation may result from students' feelings of increased pleasure and arousal with teacher affinity-seeking behaviors.

Of interest is that while several affinity-seeking behaviors were important to cognitive and affective learning, those most significant to learning-loss were unique. That Comfortable Self, Conversational Rule-Keeping, Openness and Similarity were only significant for learning-loss suggests that different affinity-seeking behaviors may have different effects on learning outcomes. Students may feel more affect toward an instructor who facilitates enjoyment, but experience more cognitive learning from teachers skilled in conversational rule-keeping behaviors such as giving relevant answers to questions and not interrupting students.

Several affinity-seeking behaviors do not appear related to student learning. This is consistent with prior research (Richmond, 1990). Inclusion of Others, Personal Autonomy, Reward Association and Self-Inclusion did not produce significant relationships with affective learning, cognitive learning or learning-loss. These behaviors appear less important than other affinity-seeking behaviors in the classroom.

HYPOTHESIS TWO: AFFINITY-SEEKING STRATEGIES AND LIKING

The second hypothesis predicted that teacher use of affinity-seeking strategies will be significantly related to student liking. This hypothesis was confirmed (see Table 2) and findings are consistent with research by Frymier (1992).

Both this study and Frymier's (1992) research found that affinity-seeking strategies accounted for 61% of the variance in liking. While there were several differences between those behaviors that accounted for significant unique variance, there was more agreement than disagreement. Whereas we found Inclusion of Others and Altruism accounting for unique and significant variance, Frymier (1992) did not find such relationships. She also found Physical Attractiveness and Sensitivity accounted for unique variance; this study, however, did not find these strategies significant. Regardless of these differences, the present study confirms a relationship between teachers who use affinity-seeking strategies and student liking.

Finding relationships between teacher behavior and student liking strengthens the argument that teacher behaviors have an affect upon student's feelings. However, we have argued that student emotional responses to teacher behavior can be more precisely measured by applying the implicit communication paradigm to teacher-student interaction. The scales developed by Frymier (1992) to measure student liking are similar to scales used to measure emotional responses of pleasure-displeasure. Using a three-part conceptualization of student emotional response (pleasure, arousal and dominance) may result in a better understanding of student interpretations of teacher behavior than just assessing one dimension (liking or pleasure).

HYPOTHESIS THREE: EMOTIONAL RESPONSE AND LEARNING

The third hypothesis predicted that pleasure, arousal and dominance will be significantly and positively related to student cognitive and affective learning. This hypothesis was confirmed and is consistent with previous research (Butland & Beebe,

1992a; Butland & Beebe 1992b). The relationship among student emotion and learning may be summarized as: students who felt pleasure and arousal also self-reported more learning. Results for multiple regressions are reported in Table 3. For the criterion variable of affective learning, 61% of the variance was accounted for by pleasure and arousal. Dominance did not achieve significance and, therefore was not included in the regression model.

For cognitive learning, arousal and pleasure emerged as significant and accounted for 27% of the variance. For Learning-loss, pleasure and arousal accounted for 24% of the variance. In both models, dominance failed to achieve significance and was excluded.

While both pleasure and arousal were important to all measures of learning, the relative importance of each seems to vary according to the criterion variable. For affective learning and learning-loss, pleasure was the major contributor, followed by arousal. For cognitive learning, arousal's contribution was larger than that of pleasure. These findings suggest that it would be inaccurate to generalize that only one dimension (pleasure) is of primary importance to learning and that another dimension (arousal) is of secondary importance. Teachers would be well advised to assess how their behaviors effect student emotional responses in terms of both pleasure and arousal. As stressed in introductory communication courses, meaning is in an individual's interpretation of behavior, and not inherent in the behavior itself.

HYPOTHESIS FOUR: EMOTIONAL RESPONSE, AFFINITY-SEEKING, AND LEARNING

The fourth hypothesis predicted that pleasure, arousal and dominance will account for more variance in student cognitive and affective learning than will affinity-seeking strategies. This hypothesis was also supported. Results for multiple regressions are reported in Table 4. For affective learning, pleasure and arousal were forced into the model and accounted for 63% of the variance. Five significant affinity-seeking strategies

were next stepped in and increased variance accounted for by an additional 7%. An examination of the beta-weights indicates that pleasure and arousal were clearly the major contributors, followed distantly by Listening, Concede Control, Elicit Other's Disclosure, Self-Concept Confirmation and Inclusion of Others.

For cognitive learning, pleasure and arousal were again the major contributor, accounting for 28% of the variance. Three affinity-seeking strategies (Dynamism, Listening, Assume Control) were significant and included in the model, increasing the variance accounted for by an additional 5%. For learning-loss, pleasure and arousal accounted for 25% of the variance, with one affinity seeking strategy (Assume Control) emerging as significant and contributing an additional 2%.

To further investigate, simple Pearson correlations were calculated and are reported in Table 5. Examination of correlations indicates that for affective learning, pleasure and arousal have relatively large effect sizes (<.70), while dominance and eight affinity-seeking behaviors demonstrate a medium effect (.40-.70). Inspection of correlations for cognitive and learning-loss clarify pleasure and arousal as primary and dominance and affinity-seeking behaviors as secondary.

Although the dominance dimension demonstrated lower reliabilities, it did produce significant and moderate correlations with all three measures of learning. This suggests that the dimension is present to some degree in the classroom. Even though Russell (1978, 1980) speculates that the dominance dimension is the weakest, and others have found dominance weak as well (Butland & Beebe, 1992b; Christ 1985), it may yet be too early to abandon the tripartite theoretical assumption underling implicit communication theory. If a more reliable measure for this dimension were employed, it may yet emerge as an important variable in predicting student learning. Perhaps cultural expectations of the teacher as dominant or "in charge" and the student as one who follows the directions of the teacher may explain why the dominance dimension has failed to reliably measure student feelings of dominance or submissiveness. Additional research is

needed to investigate how student feelings of dominance or submissiveness effects student learning.

These results suggest that student emotional response to teacher behaviors may be a more precise method of assessing student meaning ascribed to teacher behaviors. We agree with Richmond's (1990) conclusion that "meanings in the minds of students, not teachers, are the critical meanings" (p. 193). Richmond suggests that assessing student motivation may be the key to interpreting student ascribed meanings to teacher behaviors. As operationalized by Richmond (1990), motivation was measured by asking students how they felt about studying the content in the class. Motivation was conceptualized as a predictor of approach or avoidance toward learning. Assumptions of the tripartite dimensions of pleasure, arousal and dominance may help us more accurately measure how students interpret teacher behaviors and assess approach or avoidance to learning. None of the 25 measures of affinity-seeking behaviors assess whether the teacher *explicitly* said "I like you" or "I want you to like me and the subject I'm teaching." Rather, they described behaviors that *implicitly* communicate affinity. Therefore, implicit messages may prove useful in helping us interpret what teacher behaviors mean in the minds of students. The emotional responses to these teacher behaviors may be the best predictors of student approach-avoidance toward the teacher and subject (cognitive and affective learning). Knowing how students emotionally respond to teacher behaviors may help us develop more effective teacher training and education efforts.

While giving us insights as to the role of human emotional response in explaining learning, this study is not without limitations. The length of the survey may have contributed to subject fatigue and affected the results. In addition, new methods need to be found to measure human emotional response. Asking students to recall emotional responses to a stimuli clearly draw upon cognitive information as well as emotions. Yet responses to implicit messages are assumed to be based upon emotional rather than cognitive responses as a key predictor of approach-avoidance behaviors.

Exploring the use of physiological measures of pleasure, arousal and dominance such as facial expressions, pulse rate and body symmetry as well as self-assessment measures such as Continuous Affective Response Technology (Ivy, Beebe, Friedreich, Javidi & Biggers, 1991) should be investigated. If valid and reliable measures of student emotions can be isolated, investigations of teacher variables that effect student emotions will have more precision.

More direct measures of student cognitive learning would also strengthen claimed relationships between teacher behaviors, student emotional responses and learning. The measures of cognitive learning used in this study are consistent with methods used during the past decade to measure relationships between teacher use of immediacy, power and affinity-seeking behaviors (Frymier, 1992; Frymier & Thompson, 1992; Gorham, 1988; Gorham & Christophel, 1990; Richmond, 1990; Richmond, Gorham & McCroskey, 1987; Richmond, McCroskey, Kearney & Plax, 1987). It can be argued, however, that perceived student learning is a less direct measure of cognitive learning than actual assessments of information gain. A stronger case for linking teacher behaviors with cognitive learning can be made if more direct measures of learning are employed (Gorham and Kelly ,1988).

CONCLUSION

In this study, the relationship among student emotions and learning has been investigated. Increases in student pleasure and arousal levels are positively associated with cognitive and affective learning. These findings, consistent with previous research (Butland & Beebe, 1992a; Butland & Beebe 1992b), lend credibility to the importance of relationships between messages and learning. Assessing student emotions is a more direct and precise way of explaining the effects of specific variables on learning; this can result in increased clarity in understanding how teacher behavior is interpreted by students.

Teacher use of affinity-seeking behaviors were found to correlate with increased feelings of pleasure and arousal. Findings suggest that teacher affinity-seeking behaviors may by implicitly communicate liking to students resulting in an increase in student emotions indicative of a reciprocal liking. This reciprocal liking, in turn, leads to physical and/or psychological approach characteristic of increased student learning. This response may help explain why students may report being more motivated to learn when teachers use affinity-seeking behaviors (Richmond, 1990).

We have over two decades of research which identifies relationships among specific teacher behaviors such as immediacy, use of Behavior Alteration Techniques and affinity-seeking behaviors and student outcomes variables. Understanding the relationship between these and other teacher behaviors and student emotional response may help us better explain and predict teacher effectiveness and student learning. Unraveling such mysteries will help existing teachers as well as the teachers of tomorrow.

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TABLE 1

Multiple Regression Results for Affinity-Seeking Strategies and Learning Measures

	Total Affective Learning			Cognitive Learning					
				Learning			Loss		
Affinity Strategy	F	P	R^2	F	P	R^2	F	P	R^2
Altruism	2.450	0.1187	—	1.519	0.2188	—	1.395	0.2386	—
Assume Control	0.613	0.4344	—	4.150	0.0400	.01	2.656	0.1042	—
Assume Equality	0.994	0.3196	—	.5470	0.4602	—	0.349	0.5552	—
Comfortable Self	1.119	0.2912	—	0.481	0.4884	—	6.170	0.010	.02
Concede Control	0.001	0.9804	—	0.527	0.4685	—	0.486	0.486	—
Conversational Rule-Keeping	0.855	0.3560	—	1.811	0.1794	—	7.630	0.006	.02
Dynamism	0.381	0.5378	—	7.620	0.0060	.02	0.218	0.6408	—
Elicit Other's Disclosure	1.006	0.3168	—	0.018	0.8947	—	0.102	0.7496	—
Facilitate Enjoyment	17.450	<.0010	.04	9.630	0.0020	.03	1.743	0.1878	—
Inclusion of Others	0.462	0.4974	—	1.036	0.3096	—	0.370	0.5434	—
Influence	0.813	0.3680	—	0.058	0.8096	—	1.059	0.3044	—
Perceptions of Closeness									
Listening	17.340	<.0010	.04	10.220	0.001	.03	1.809	0.1797	—
Nonverbal Immediacy	0.072	0.7890	—	0.104	0.7467	—	0.950	0.3305	—
Openness	0.510	0.4759	—	0.669	0.4140	—	6.150	0.010	.02
Optimism	1.786	0.1826	—	2.226	0.1367	—	0.554	0.4573	—
Personal Autonomy	2.663	0.1039	—	1.924	0.1664	—	0.267	0.6057	—
Physical Attractiveness	0.256	0.6136	—	0.322	0.5705	—	0.103	0.7489	—
Present Interesting Self	0.167	0.6833	—	0.241	0.6238	—	0.251	0.6167	—
Reward Association	0.465	0.4958	—	1.069	0.3021	—	1.502	0.2213	—
Self-Inclusion	15.610	<.0010	.03	0.387	0.5344	—	3.861	0.0503	.01
Self-Inclusion	11.820	<.0010	.02	0.459	0.4984	—	3.977	0.0470	—
Sensitivity	1.782	0.1831	—	0.723	0.3958	—	0.049	0.8252	—
Similarity	0.187	0.6661	—	0.597	0.4402	—	6.350	0.010	.02
Supportiveness	0.725	0.3952	—	0.431	0.5118	—	0.090	0.7649	—
Trustworthiness	11.150	<.0010	.02	9.650	0.0020	.03	1.534	0.2164	—
Total	41.600	<.0010	.44	14.820	<.0010	.20	13.11	<.001	.18

Table 2

Multiple Regression Results for Affinity-Seeking Strategies and Liking

Affinity Strategy	Liking F	Liking P	Liking R^2
Altruism	10.87	<.001	.01
Assume Control	1.34	.25	—
Assume Equality	1.49	.22	—
Comfortable Self	2.04	.15	—
Concede Control	0.30	.59	—
Conversational Rule-Keeping	1.33	.25	—
Dynamism	0.80	.37	—
Elicit Other's Disclosure	5.30	<.02	.01
Facilitate Enjoyment	28.59	<.001	.04
Inclusion of Others	15.85	<.001	.02
Influence Perceptions of Closeness	1.33	<.25	—
Listening	8.02	<.01	.01
Nonverbal Immediacy	2.18	.14	—
Openness	0.11	.74	—
Optimism	10.31	<.001	.01
Personal Autonomy	6.23	<.01	.01
Physical Attractiveness	1.21	.27	—
Present Interesting Self	1.35	.25	—
Reward Association	1.24	.27	—
Self-Inclusion	1.74	.19	—
Self-Inclusion	1.68	.20	—
Sensitivity	0.10	.75	—
Similarity	1.62	.20	—
Supportiveness	0.05	.80	—
Trustworthiness	50.98	<.001	.07
TOTAL	57.50	<.001	.61

† P < .01
‡ P < .001

Table 3

Multiple Regression Results for Emotional Response and Learning

	Total Affect †	Cognitive Learning †	Cognitive Loss †
Pleasure	.13 .42@@	.03 .23@@	.07 .34@@
Arousal	.11 .45@@	.07 .34@@	.03 .20@
Dominance	.02 *	.00 *	.00 *
Colinearity	.35	.17	.14
R^2	.61	.27	.24

* Did not achieve .05 level of significance required to enter model
† Model is significant at .0001 level
@@ Coefficient is significant at .001 level
@ Coefficient is significant at .01 level

Table 4

Multiple Regression Results for Emotional Response, Affinity-Seeking Strategies, and Learning

	Total Affect	Cog	Loss
Pleasure	.08 ‡	.05‡	.09 ‡
Arousal	.08 ‡	.05‡	.02 †
Dominance	.01 †	—	.01
Altruism	—	—	—
Assume Control	—	.01 †	.02 †
Assume Equality	—	—	—
Comfort-able Self	—	—	—
Concede Control	.01 †	—	.01
Conversational RuleKeeping	—	—	.01
Dynamism	—	.04 ‡	—
Elicit Other's Disclosure	.01 †	—	—
Facilitate Enjoyment	—	—	—
Inclusion of Others	.01 †	—	—
Influence Perceptions of Closeness	—	—	—
Listening	.02 †	.03 †	—
Nonverbal Immediacy	—	—	—
Openness	—	—	—
Optimism	—	—	—
Personal Autonomy	—	—	—
Physical Attractiveness	—	—	—
Present Interesting Self	—	—	—
Reward Association	—	—	—
Self-Inclusion	.01 †	—	.01
Self-Inclusion	—	—	—
Sensitivity	—	—	—
Similarity	—	—	.01
Supportiveness	—	—	—
Trustworthiness	—	—	—
Colinearity	.47	.15	.10
VAF	.70 ‡	.33	.28

‡ P < .001
† P < .01

Table 5

Simple Pearson Correlations for Student Emotional Response, Affinity-Seeking Strategies, and Learning

		Cognitive Learning	
	Total Affect	Learning	Loss
Altruism	+0.3518 ‡	+0.1972 †	–0.2689 ‡
Assume Control	+0.1867 †	+0.1737 †	–0.2099 †
Assume Equality	+0.3120 ‡	+0.1960 †	–0.2468 ‡
Comfortable Self	+0.3361 ‡	+0.2009 †	–0.2584 ‡
Concede Control	+0.2375 †	+0.1733 †	–0.2445 †
Conversational Rule Keeping	+0.4211 ‡	+0.3136 ‡	–0.3288 ‡
Dynamism	+0.4724 ‡	+0.1749 †	–0.2329 ‡
Elicit Other's Disclosure	+0.4452 ‡	+0.2380 ‡	–0.2311 ‡
Facilitate Enjoyment	+0.5233 ‡	+0.2660 ‡	–0.2703 ‡
Inclusion of Others	+0.0838	+0.0158	–0.1676
Influence Perceptions of Closeness	+0.1128	+0.0885	–0.1441
Listening	+0.5613 ‡	+0.4026 ‡	–0.3437 ‡
Nonverbal Immediacy	+0.3738 ‡	+0.2795 ‡	–0.2400 ‡
Openness	+0.3004 ‡	+0.2295 ‡	–0.3023 ‡
Optimism	+0.4721 ‡	+0.2822 ‡	–0.3007 ‡
Personal Autonomy	+0.0003	+0.0269	–0.0077
Physical Attractiveness	+0.2688 ‡	+0.1949 †	–0.1136
Present Interesting Self	+0.2739 ‡	+0.1571	–0.2294 ‡
Reward Association	+0.0896	+0.0434	–0.0894
Self-Inclusion	+0.4644 ‡	+0.2782 ‡	–0.3657 ‡
Self-Inclusion	+0.0687	+0.0888	–0.1273
Sensitivity	+0.3879 ‡	+0.2695 ‡	–0.3119
Similarity	+0.2142 ‡	+0.1944	–0.2789
Supportiveness	+0.3251 ‡	+0.2462 ‡	–0.2377 ‡
Trustworthiness	+0.4905 ‡	+0.3701 ‡	–0.3108 ‡
Pleasure	0.7111 ‡	0.4898 ‡	0.5140 ‡
Arousal	0.7262	0.5432	0.4913 ‡
Dominance	0.4428	0.2360	0.3201

† P < .01
‡ P < .001